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The Performance of Socially Responsible Investments in Indonesia: A Study of the Sri Kehati Index (SKI)

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Abstract: This study examines the performance of the Sri Kehati Index (SKI) against the Jakarta Composite Index (JCI) as the market index, using respective daily index prices from the 1st of January 2009 to the 31st of December 2014. This study uses the risk-adjusted return of Sharpe's Index, the Adjusted Sharpe's Index (ASI), Treynor's Index, Jensen's Alpha Index, the Adjusted Jensen's Alpha Index (AJI) and Sortino's Ratio to examine the performance of the SKI and the JCI. Except for Sharpe's Index and the Adjusted Sharpe's Index, the risk-adjusted return performance of the SKI (Treynor, Jensen's Alpha, Adjusted Jensen's Alpha and Sortino) outperforms the JCI as the conventional benchmark. However, Jensen's Alpha is the only performance measure that is significant and therefore supports that the SKI outperforms the JCI during the overall period from 2009 to 2014. As there is a contradiction between the adjusted returns of Sharpe's Index/Adjusted Sharpe's Index and Jensen's Alpha Index, the hypothesis that the SKI presents a higher risk adjusted performance than the JCI does, it cannot be accepted. Even though the performance of SKI in this study is slightly lower over the whole period of the study, it is still generating competitive returns.

Abstrak: *Penelitian ini menguji kinerja Sri Kehati Indeks (SKI) terhadap Indeks Harga Saham Gabungan (IHSG) sebagai indeks pasar, dengan menggunakan harga indeks harian masing-masing dari 1 Januari 2009 sampai 31 Desember 2014. Penelitian ini menggunakan* risk-adjusted return of Sharpe's Index, Adjusted Sharpe's Index (ASI), Treynor's Index, Jensen's Alpha Index, Adjusted Jensen's Alpha Index (AJI)*, dan* Sortino Ratio *untuk menguji kinerja SKI dan IHSG. Kecuali untuk* Sharpe's Index *dan* Adjusted Sharpe's Index*, kinerja* risk-adjusted return *dari SKI* (Treynor, Jensen's Alpha, Adjusted Jensen's Alpha *dan Sortino) melebihi IHSG sebagai patokan konvensional. Namun, Jensen Alpha adalah satu-satunya ukuran kinerja yang signifikan dan karena itu mendukung bahwa SKI melebihi IHSG selama periode keseluruhan dari 2009 sampai 2014. Seperti ada kontradiksi antara* adjusted returns of Sharpe's Index/Adjusted Sharpe's Index *and* Jensen's Alpha Index*, hipotesis bahwa SKI menyajikan kinerja sesuaian risiko lebih tinggi dari IHSG tidak dapat diterima. Meskipun kinerja SKI dalam penelitian ini adalah sedikit lebih rendah selama seluruh periode penelitian, masih menghasilkan keuntungan kompetitif.*

Keywords: Indonesian Stock Exchange; socially responsible investment; Sri Kehati Index (SKI)

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Introduction

Socially Responsible Investment (SRI), which is concerned with ethical investment decisions, has grown significantly in the last four decades. Socially responsible investors use a combination of financial and social criteria to focus on their investment decisions, hence the investments they select are consistent with their personal value's system and beliefs, (Das and Rao 2013; Hamilton et al. 1993; Sauer 1997). SRI describes an investment process which considers and adopts the issues of Environmental, Social, Governance (ESG) or ethical considerations. According to The Forum for Sustainable and Responsible Investment (2012), this process is integrated into an investment's selection, by the inclusion of one or more of the ESG's practices in the analysis and monitoring of an investment

An awareness of SRI also exists in Indonesia. This is manifest by the creation of an index called the Sri Kehati Index (SKI). This index was developed by the KEHATI Foundation, in collaboration with the Indonesian Stock Exchange (IDX) in 2009. The creation of this index was triggered partly by the environmental destruction caused by some Indonesian companies, such as PT Newmont Nusa Tenggara and PT Newmont Minahasa Raya Mine. It was expected that the public would be made aware of the existence of an index showing companies regarded as beneficial and constantly managing sustainable development. The SKI was established as an ethical index for SRI investors to review the performance of companies' profitability, supported by their ESG performances. The establishment of a socially responsible investment index aimed to raise awareness of the conservation of biodiversity among the shareholders, the industry and the capital market's players. It also had the objective of providing open information to the public regarding the selection and identification of companies included in the index. The inclusion of the companies is evaluated twice a year, in April and October. The screening process involves an initial exclusion selection of negative line-of-business aspects [such as pesticide use, nuclear, weapons, tobacco, alcohol, pornography, gambling, and Genetically Modified Organisms (GMO)]. This is then followed by the financial screening of the companies i.e. their market capitalization and an asset ownership of above Rp 1 trillion, based on their latest audited financial reports, with a 10 percent public ownership on the Indonesian Stock Exchange. The companies must also have maintained a positive Price/Earnings (PE) Ratio during the last six months. A further screening also evaluates the fundamental aspects of the companies (such as their corporate governance, environmental record, community involvement, business manners, human resources, and human rights record). Eventually, the selection process determines 25 companies that are qualified to be included in the SKI. Table 1 shows the companies which were consistently listed in the SKI during five years (2009 to 2014) on the Indonesian Stock Exchange.

The index obtained a positive reaction on its first trading day, with a value of 116.946. Though SRI is not a new concept in the world, it is still regarded as an emerging issue for investment in Indonesia, with only a few studies of it having been conducted so far. There are also very few limited studies analysing the comparative risk adjusted return performance of SRI funds in Indonesia. The existing studies about socially responsible investments in Indonesia have been conducted by Layungasri (2010) and Khotim

Table 1. **Consistently Listed Companies in the SRI Kehati Index 2009 to 2014**

No	Code	Name	Type of Industry
1	(AALI)	Astra Agro Lestari Tbk	Plantation
2	(ANTM)	Aneka Tambang (Persero) Tbk.	Mining
3	(ASII)	Astra International Tbk.	Automotive
4	(BBCA)	Bank Central Asia Tbk.	Banking
5	(BBNI)	Bank Negara Indonesia (Persero) Tbk.	Banking
6	(INDF)	Indofood Sukses Makmur Tbk.	Food and Retail
7	(KLBF)	Kalbe Farma Tbk.	Pharmacy/Medicine

(2014), where Layungasri's (2010) study concerned the mining companies that were listed in the SKI. This study discussed "green companies" i.e. the way mining companies carried out their CSR as part of their responsibilities to the environment. It concluded that the mining companies obeyed the laws and the requirements for SRI screening and SRI criteria, so that they would be accepted and recognized as part of the SKI. Furthermore, Khotim (2014) only conducted his analysis with a single index model of a portfolio, without calculating Sharpe, Jensen and Treynor's measurements over the 2010 to 2013 period. However, this does not specifically discuss a comparison of the risk-return performance of the SKI with conventional benchmarks. A SRI study from a neighboring country (Malaysia) also showed the existence of SRI empirical literature on emerging markets. Nevertheless, this Malaysian SRI study did not focus on financial performance analyses. It was conducted by Adam and Shauki (2012) and directed towards the behavior of SRI investors' decision making processes. Using Jensen's Alpha for equally weighted portfolios of ethical and conventional funds from Asia-Pacific countries (Australia, Japan, Malaysia and Singapore), Renneboog et al. (2008a) found a striking finding that SRI funds in all the countries underperformed both the stock market index and the conventional funds.

SKI has been realized as a potential tool for social and economic change. As stated by Waring and Lewer (2004), investors found out that their funds were invested according to social concerns, without consideration of the financial returns. In addition, SRI is perceived as an investment that essentially results in lower risks to the investor (Sauer 1997). Consistent with this argument, studies by Hamilton et al. (1993) and McGuire et al. (1988) indicated that they mostly agreed that socially-ethical investments are associated with lower risks. One important question that must be asked here is: 'Are the risks and returns of socially responsible stocks equal to the risk and returns of conventional stocks?' Studies into this issue have increased significantly in the recent years, but the results have been rather mixed. Hence, this study will examine and compare the performance of the SKI against the benchmark market index of the Jakarta Composite Index (JCI) in order to ascertain whether socially responsible invest-

ments do indeed provide superior performance.

The result of this socially responsible investment study is expected to contribute to both investors and listed companies as well. Stockholders can get benefits, not only from the returns on their investments, but also help the companies get ESG benefits for better sustainable and responsible practices. The result of this study is also expected to provide information to help investors make better investment decisions in order to get the best risk-return profile.

The rest of the paper is organized as follows. Section 2 will review the previous studies into socially responsible investments, and discuss the performance measures used in previous empirical research. The methodology is explained in Section 3. In Section 4, the findings and discussion will be presented. Section 5 will conclude the paper.

Literature Review

Theoretical Perspective of Socially Responsible Investment

Neo-classical economics assumes that investors care about two characteristics of their investment decisions, i.e. the investment's expected risk and its expected return (Hickman et al. 1999). From the perspective of responsible investment, SRI is not only focused on the risk-return relationship of an investment but also the impact of the investment on society (Plantinga and Scholtens 2001)

Triple Bottom Line Perspective

Different investors might have different mindsets (Sandberg 2007). SRI investors avoid companies that produce goods related to any of the negative screenings. They select companies which have a positive record with good social, environmental and governance histories (Renneboog et al. 2008b). This is consistent with the triple bottom line theory stating that the planet for environment, people for social and profit for good governance (Elkington 1994). The investors should not only consider their return on a financial investment, but also care about the importance of its social value, business place, the characteristics of a company's goods or services, and the way a business is run. Consequently, a corporation should play a part in its long-term impact on the environment and society (Sparkes 2002; Vives and Wadhwa 2012). This is one of the reasons why the focus for the motivation of SRI investors requires changes in their mindset and personal beliefs for a better environment, social matters and governance without sacrificing the return on the investment. With this triple bottom line investment strategy (people, planet and profit), they not only want to achieve the goal of a return on their investment but also integrate their environmental, social and governance considerations into the investment decision (Budde 2008; Sandberg 2008; Schueth 2003).

Portfolio Theory Perspective

Since the financial return is regarded as an important investment consideration Markowitz (1952), in his portfolio theory, explains that the aim of investors is to maximize their wealth. In addition, the portfolio theory describes the importance of diversification in reducing risks without sacrificing returns. This portfolio effect is an output from the correlation of returns among securities (Ferruz et al. 2010; Hickman et al. 1999; Le Maux and Le Saout 2004). Markowitz (1952) also focused on the financial returns, particu-

larly in choosing a portfolio's asset allocation. Markowitz's contribution specifically describes how a well-diversified portfolio reduced the risk of equity investments.

It is argued by Black and Litterman (1992) that investors with a global portfolio are rewarded for their asset allocation decisions. However with different asset classes, the portfolio's performance is consistent with the theory that higher risks are associated with greater returns (Larsen, 2013). The portfolio theory showed that a restriction on financial investments will generate a poorer risk adjusted return (Jansson et al. 2011; Schröder 2004). Based on that, selecting a portfolio determined by ethical screening can be identified as a high value practice that may last with no negative impact on the investment's return (Bauer et al. 2006). Therefore, investors are willing to receive lesser returns in return for better sustainability in the world (Hamilton et al. 1993).

As mentioned earlier, SRI offers a portfolio that is based on ESG screening. However, social screens could constrain a portfolio's improvement (Bollen 2007). Undoubtedly, prior studies demonstrate that a significant number of investors want a portfolio that is consistent with their personal values, which therefore limits diversification. In other words, they refuse to invest in a "sin-stock" portfolio and so the SRI provides them with the ability to invest in firms that support ESG (Kinder 2005). This is consistent with Statman (2013) who gave an idiom regarding investment portfolios which states that *"The frying pan of investments is sometimes very hot, but we should pause and think before we jump into the fire"*.

Doing Well While Doing Good Perspective

Despite providing a better performance, SRI is against "sin-stocks". Instead, SRI argues that an investment should follow the term *"Doing well while doing good"* as noted by Hamilton et al. (1993). In this context, SRI funds use screening to distinguish them from other investments without neglecting the main purpose of an investment; its returns. This argument is also supported by Derwall et al. (2005) who specifically discussed what is called the *"eco-efficiency premium puzzle"* which explains that SRI portfolio funds have a better risk-return profile than the conventional funds. By applying screening to an investment portfolio, the investor is open to risk adjusted returns that are matched to their mindset. In line with this, the investors are more convinced about the performance of SRI investments. This can be connected to Galema et al. (2008) who argued that the establishment of SRI portfolios with good implementation in the environmental, diversity and technology fields of eco-friendly products had a significant impact on stock returns.

Though SRI filters cause a restraint in the investment options available and the outputs are less from the expected risks and returns (Consolandi et al. 2009), there is some surprising evidence from the point of view of economic and finance theories. Studies by Hamilton et al. (1993), Derwall et al. (2005), Statman (2000), Bauer et al. (2005) for example, found that the environmental, social and good corporate governance screening in the investment process resulted in a significantly better performance than the benchmarks.

Empirical Evidence and Hypothesis Development

Studies about SRI's performance are varied. Besides socially responsible indices, the previous empirical studies integrated the comparison of SRI mutual funds with the conventional benchmark's performance. The socially responsible mutual fund's literature, for the majority, were focused on the US and Europe. The common measurements of funds' performance are Sharpe's Ratio, Treynor's Ratio, Jensen´s Alpha Ratio, and Sortino's Ratio, that all have the specific purpose of explaining the funds' risks and returns. Most studies used these models to measure the comparative performance of SRI funds. The following sections describe each one of these risk-adjusted performance measures used in the previous research.

Sharpe Index Performance Measure

Ferruz et al. (2010) defines Sharpe's Ratio as a measurement calculating unit of the return from the less risk free-rate asset portfolio that is related to the total risk. This Sharpe's Ratio measurement is aimed at evaluating portfolios with diversifiable or unsystematic risks. The higher that the value of Sharpe's Ratio is, this indicates a better risk-adjusted performance. A study by Sauer (1997) specified the Sharpe's Ratio for a socially responsible index, namely the DSI Index, together with the S&P 500 Index and the CRSP Value Weighted Market Index, as conventional benchmarks indices. The findings indicated a positive impact for SRI's performance using risk adjusted returns. With a higher Sharpe's Ratio, it can be concluded that the application of socially screened investment index selections justifies that this ratio would not eliminate the benefits of SRI's diversification.

Another study using Sharpe's Ratio, to compare between sustainability indices and the conventional benchmark, was done by Le Maux and Le Saout (2004). This study used the sustainability indices data, consisting of the DJSI World, FTSE4Good Global 100, FTSE4Good UK50, FTSE4Good US100 and FTSE4Good Europe 50. Segregating the data into two sub periods, the findings concluded that the majority of the sustainability indices had higher values for Sharpe's Ratio (= outperform) than the conventional benchmarks.

In a larger number of SRI indices, Schröder (2007) reviewed the performance of 29 SRI indices versus the conventional benchmarks using Sharpe's Ratio measurements. 18 indices were documented as having a higher performance compared to the relevant conventional benchmark indices. Schröder (2007) argued that the common assumption of SRI's screening selection mechanisms for an asset is correlated with a relatively low risk. Findings from Beer et al. (2011) also documented that the sustainability index (Domini 400 Social Index) performed better than a conventional index benchmark (S&P 500). The Domini 400 Social Index recorded 0.004469 points which outperformed the S&P 500 (-0.03918). Therefore, the authors concluded that investment decisions which also factor in concerns about environmental, social and governance matters provide a positive impact over the long-term. In a more recent study, Brzeszczyñski and McIntosh (2013) used the modified Sharpe's Ratio, based on the performance of British SRI stocks, to compare an SRI portfolio and its benchmark. The results demonstrated that the modified Sharpe's Ratio for the SRI portfolios always performed better (higher) than those for the conventional

benchmarks, namely the FTSE100 and FTSE4GOOD, over the whole period.

Treynor's Index Performance Measure

Ferruz et al. (2010) described the return premium of Treynor's Ratio Index performance measure, which was obtained from the asset or portfolio per unit of systematic risk. This Treynor's Ratio assessed the returns earned in excess of a riskless investment, per unit of market risk (Beer et al. 2011). Kreander et al. (2005) used Treynor's Ratio as the risk-adjusted performance returns for the comparative performance analysis in a sample of 13 domestic ethical funds that were recognized as Euro Zone funds. Treynor's Ratio showed that 8 (UK and Sweden) from 13 domestic ethical funds outperformed their non-ethical mutual funds' benchmarks. Another study by Cummings (2000) indicated that SRI ethical trusts outperformed the trust's industry average index as the conventional benchmark. Meanwhile, Collison et al. (2008) analyzed the risk-adjusted return performance of SRI indices using Treynor's Ratio over two periods. However, unlike the earlier studies, the analysis resulted in negative values, which indicated that the SRI indices underperformed their conventional counterparts.

Jensen's Alpha Index Performance Measure

Jensen's Alpha measurement is also used to identify whether an index outperforms or underperforms a market portfolio. In another interpretation, it estimates the extra or excess returns earned by a fund. DiBartolomeo and Kurtz (1999) considered the return performance by using Jensen's Alpha measurement and found positive alphas for the Domini Social Index (DSI) and the S&P 500. Moreover, the DSI had a higher alpha than the S&P 500 as the conventional benchmark. The outperformance of the DSI was considered as evidence that the social screening factor made a contribution to the performance of the investment index.

A study by Kreander et al. (2005) was conducted to analyze the Jensen's Alpha Ratio of 17 international ethical mutual funds. The results of this study showed that the average of the overall Jensen's Alpha Ratio of the funds was 0.00032, higher than their conventional mutual fund benchmark at -0.0019. A higher Jensen's Alpha for socially responsible portfolios was also observed in a study by Bello (2005). The study compared socially responsible portfolios between the S&P 500 (the conventional index benchmark) and the DSI 400 (the SRI benchmark). From the risk-adjusted return performance measure of Jensen's Alpha, the socially responsible portfolios recorded an alpha of 0.0777 points which was higher than the Jensen's Alpha of the S&P 500.

Sortino's Ratio Performance Measure

Sortino's Ratio focuses on the downside risk of whether a risk is favorable, from a risk free rate or not point of view. The formula is similar to Sharpe's Ratio, but risk is measured by the downside risk's deviation (Beer et al. 2011). A large Sortino's Ratio value indicates a low probability of a large loss. Related to the risk adjusted performance measures, Beer et al. (2011) analysed the downside risk of the KLD Domini 400 Social Index, compared to the conventional index benchmark (S&P 500). The findings indicated that the KLD Domini 400 Social Index outperformed the S&P 500. de Souza Cunha and Samanez (2013) studied Sortino's Ratio with the Corporate Sustainability Index (ISE). The findings showed that Sortino's Ratio for the ISE was outperformed in the study period by the market's portfolio (IBOVESPA).

Therefore, from the discussion and empirical evidence of the risk-adjusted return measures above, the hypothesis is developed as follows:

H: The SKI presents significantly higher risk-adjusted returns than the Jakarta Composite Index (JCI).

Data and Methods

The daily closing indices are used to measure the performance of the SKI and the Jakarta Composite Index. The daily closing indices were collected from IDX monthly statistics and the IDX statistics daily report. The data for this study were collected from January 2009 to December 2014, as the SKI was only introduced on December the 28th, 2006 and launched in January 2009.

The first step to identifying the return is by calculating the average daily raw returns of both the SKI and the Jakarta Composite Indices. The actual daily return (R_t) for both indices are formulated as shown in Equation 1, and then averaged over the period by dividing them by the number of days (N), as in Equation 2.

$$R_t = \frac{(P_t - P_{t-1})}{P_{t-1}} \quad \text{..... (1)}$$

Where:

P_t = index level at time t

P_{t-1} = index level at time *t*-1

$$\text{Average } R_i = \frac{1}{N}\sum_{t=1}^{t}\frac{(P_t - P_{t-1})}{P_{t-1}} \quad \text{..... (2)}$$

Where:

P_t = index level at time *t*

P_{t-1} = index level at time *t-1*

N = number of days

Sharpe's Index (SI) performance measure indicates the risk premium return per unit of the total risk. Sharpe's Ratio also measures the performance of the SRI index, the mean of excess return, standard deviation and return of the risk-free interest asset (Derwall et al. 2005). Sharpe's Index (1966) for indices can be expressed as follows:

$$SI = \frac{R_i - RFR}{\sigma_i} \quad \text{.....(3)}$$

Where:

R_i = average return for the index

RFR = risk-free rate (SBI)

σ_i = standard deviation of the indices returns.

The standard deviation for both indices (σ_i) is computed by using the equation below.

$$\sigma_i = \sqrt{\sum \frac{[(R_{i,t} - E(R_{i-t})]^2}{N}} \quad \text{.....(4)}$$

Where E ($R_{i,t}$) is the expected return of the index.

As the next stage of Sharpe's Index performance test, this study will calculate the Adjusted Sharpe's Index performance measure (ASI). This adjustment is due to the bias in the estimation of the standard deviation (Jobson and Korkie (1981)). Similar studies conducted using this method include those by Hamzah et al. (2009), and Ahmad and Ibrahim (2002). Those studies used the equation as follows:

$$ASI = SI\ X\frac{\text{no. of observations (N)}}{\text{no. of observations (N)} + 0.75} \quad \text{..(5)}$$

The next performance measure used is Treynor's Index (TI). This performance measure can be estimated by calculating the ratio

of the average return to the beta of the fund. The performance measurement of Treynor's Ratio is different from Sharpe's measurement because the former only treats the systematic risks or beta (â) for the indices when examining performance. The TI ratio for both indices ($TI_{i,t}$) are calculated using the following:

$$\mathrm{TI}_{i,t} = \frac{(R_i - RFR)}{\beta} \quad \text{.....(6)}$$

where $R_{i,t}$ and *RFR* are as previously defined. The TI measure is a relative measurement which needs to be compared to the market portfolio. A portfolio with a higher TI value than the market indicates that the portfolio has a better risk-adjusted performance.

The beta coefficient (β) of the SKI was obtained by regressing past returns of the index against the market returns by using the market model given below.

$$\mathrm{R}_{i,t} = \sigma_i + \beta_i R_{m,t} + e_{i,t} \quad \text{.....(7)}$$

Where:

$R_{i,t}$ = average monthly return of the index in month t

σ_i = standard deviation (regression intercept)

β_i = beta coefficient of the index

$R_{m,t}$ = daily return of the market portfolio in day *t*, proxied index

$e_{i,t}$ = regression's unexplained residual return in day *t*, where $E(e_{i,t}) = 0$

Jensen's Alpha Index is the next performance measure used. It represents the average risk premium per unit of the systematic risk. Consequently, Jensen's Alpha is a specific measurement for the risk-adjusted return of a portfolio's performance, for investors with a well diversified SRI portfolio and is primarily concerned with their exposure to systematic risk (Sauer 1997). Jensen's Alpha is usually interpreted as a measurement of out-or-under performance relative to the benchmark (Le Maux and Le Saout 2004). Like Treynor, the measurement considers the systematic risk (beta) as the relevant risk. Therefore, Jensen's Alpha measurement (α_i) is expressed as follows:

$$\alpha_i = (R_{i,t} - RFR) - \beta(R_{m,t} - RFR_t) \quad \text{.....(8)}$$

Where:

R_{it} = the return on index *i* in month *t*,

RFR = the SBI as the risk free rate in month *t*,

R_{mt} = the return on the relevant equity benchmark in month *t* and e_{it} an error term.

Nevertheless, this Jensen measure cannot be used to compare the performance of different level indices that have different average performance levels. Therefore, this Jensen's Alpha measurement has been adjusted for systematic factor risks and is called the Adjusted Jensen's Alpha Index (AJI). A positive (negative) AJI shows the superior (or inferior) performance of portfolios relative to the market. The equation for the AJI is computed as follows:

$$\mathrm{AJI} = \frac{\text{Jensen's Alpha Index (JI)}}{\text{Beta of Portfolio } (\beta_p)} \quad \text{.....(9)}$$

The last performance measure employed is Sortino's Ratio. This ratio describes the differential return of a portfolio by a unit of downside risk. The downside risk is the calculation of the risk of a portfolio, considering only its probability of incurring a return inferior to that accepted by the investor. Sortino's Ratio is computed as follows:

$$\mathrm{SoM} = \frac{R_i - RFR}{\delta_i} \quad \text{.....(10)}$$

where, R_i and *RFR* are as explained previously δ_i is the downside deviation of the rate of return of index *i* during the specified time period.

The downside risk *äï* of Sortino's Ratio is obtained by the following:

$$DownsideRisk\delta i = \frac{\sqrt{\sum[\min R_p - MAR, O]^2}}{n-1} \quad ...(11)$$

Where:

δ_i = the downside deviation

R_p = return portfolio (index)

MAR = minimum acceptable return = risk free rate (SBI)

n = number of observations

With terms:

If (R_p-MAR) Negative, then use (R_p-MAR)

If (R_p-MAR) Positive, then use 0

As in the case of Sharpe's Ratio, the investors would prefer high Sortino's Ratio values. Then, for the purpose of this research, the entrance or MAR value was set at zero, as rational investors are averse to negative fund returns (Viviers et al. 2008).

Table 2. **Descriptive Statistics of the Daily Index of the SKI and the Jakarta Composite Index from January 2009 to December 2014**

Descriptive Statistics/Index	SKI	JCI
Minimum	72.246	1,256.109
Maximum	299.564	5,246.483
Mean	203.894	3,728.981
Standard Deviation	55.332	1,024.807
Observations	1,464	

Result and Discussion

The descriptive statistics of the daily SKI and Jakarta Composite Index (JCI) are shown in Table 2. It can be seen that the SKI involved 1,464 daily index prices during the overall period which were then matched by the same number of observations from the JCI.

Sharpe's Ratio

The annual Sharpe's Ratio depicted in Table 3 demonstrates that SKI has underperformed the Jakarta Composite Index. However the significant result (at the five percent level) is only found in 2010. The same significant result is observed in the overall period from 2009-2014 but with a lower

Table 3. **Sharpe's Ratio of the SKI and the Jakarta Composite Index - Annually.**

Year	Sharpe's Ratio SRI	Sharpe's Ratio JCI	Sig. (2-tailed)
2009	0.0841	0.0977	0.47700
2010	0.0746	0.1537	0.003**
2011	0.0531	0.0599	0.66421
2012	0.0467	0.051	0.77256
2013	0.0314	0.0379	0.7463
2014	0.078	0.0783	0.98428
2009-2014	0.06138	0.0798	0.01816**

*** Significant at 5 % level*

value. These results safely reject the hypothesis that SKI presents higher risk-adjusted return performance (Sharpe's Ratio) against the Jakarta Composite Index (JCI). The outcome of this study is consistent and relevant with the SRI's empirical literature that highlights the lower performance of Sharpe Ratio's, such as Schröder (2004) and Ortas et al. (2012). Lyn and Zychowicz (2010).

Table 4. **Adjusted Sharpe's Index of the SKI and the Jakarta Composite Index - Annually**

Year	Adjusted Sharpe's Ratio SRI	Adjusted Sharpe's Ratio JCI	Sig. (2-tailed)
2009	0.08122	0.09428	0.47809
2010	0.07197	0.14815	0.00347**
2011	0.05134	0.058	0.66244
2012	0.04521	0.0493	0.77479
2013	0.03047	0.03668	0.74687
2014	0.07512	0.07538	0.98566
2009-2014	0.05922	0.07697	0.0182**

*** Significant at 5 percent level*

Due to possible bias in the estimation of the standard deviation, the study calculates the performance of the adjusted Sharpe's Index ratio which represents the relevant risk-adjusted measurement of performance with the average risk premium per unit of total risk.

As can be observed in Table 4, the result of the Adjusted Sharpe's Index (ASI) is relatively similar to the Sharpe's Ratio index's performance. The mixed results begin from 2009 until 2014. The results again show that SKI was outperformed by the JCI at a significant level of five percent, but only in 2010. Results from the overall period confirm that the JCI outperformed SKI and this is also significant at the five percent level. Therefore, the result from the adjusted Sharpe's Ratio rejects the hypothesis that the SKI presents higher risk-adjusted return performance than the Jakarta Composite Index (JCI).

Treynor's Ratio

The results using Treynor's Ratio in Table 5 conclude that SKI has a superior performance against the JCI. Except for 2009

Table 5. **Treynor's Ratio and Beta Value of the SKI and the Jakarta Composite Index - Annually**

Year	Treynor's Ratio SRI	Treynor's Ratio JCI	Sig. (2-tailed)	Beta SRI	Sig. (2-tailed)
2009	0.00184	0.00195	0.77061	0.96857	1.064E-22***
2010	0.00099	0.00146	0.0767*	0.97075	1.686E-21***
2011	0.00016	-2.67E-04	0.23924	0.97063	4.326E-20***
2012	-0.0005	-0.00097	0.29555	0.85373	1.496E-06***
2013	-0.0004	-0.00049	0.65938	0.96948	2.147E-20***
2014	0.00089	0.00068	0.0973*	0.96956	2.866E-20***
2009-2014	0.00051	0.00043	0.54909	0.95045	7.5E-63***

****Significant at 10 percent level*

and 2010, the evidence of a positive value for Treynor appears during the other annual periods, indicating an outperform condition for the SKI. However, the significant result is only found in 2014, which is higher than the JCI, which is also significant in 2010, This result demonstrates that Treynor's Ratio gives some support to the hypothesis that the SKI presents higher risk-adjusted return performance than the Jakarta Composite Index (JCI). This finding is consistent with previous empirical studies by Goldreyer et al. (1999), Le Maux and Le Saout (2004) and Kreander et al. (2005) and Goldreyer et al. (1999).

Jensen's Alpha

Referring to Table 6, the evidence of a positive Jensen's Alpha (except for 2010) shows that the SKI outperforms the market benchmark of the JCI. This is corroborated by the results from the overall period with a positive Jensen's Alpha at the significant level of ten percent.

This result supports the hypothesis that Jensen's Alpha presents a more positive, significant, high risk-adjusted return performance than the JCI do es. The positive significant alpha indicates that the socially responsible index performs better than the conventional market index. This is consistent with the findings by Cortez et al., 2009; Fabozzi, Gupta, and Markowitz, 2002).

To reinforce the performance outcome of Jensen's Alpha, the Adjusted Jensen's Alpha Index measurement (AJI) is constructed for systematic factors that are represented by beta. The value of the positive (negative) adjusted Jensen's Alpha Index shows the superior (inferior) performance of portfolios relative to the market. From Table 7, we can observe that the results of Jensen's Alpha are similar to those of the Adjusted Jensen's Alpha.

From the results tabulated above, the annual Adjusted Jensen's Alpha during 2010 and 2012 produced a negative alpha, while the other periods generate a positive alpha, with 2009 being the only year which has a significant result at the ten percent level. For the whole period from 2009 to 2014, Jensen's Alpha is positive, indicating that SKI had a

Table 6. **Jensen's Alpha of the SKI - Annually**

Year	Jensen's Alpha	Sig. (2-tailed)
2009	0.00218	0.08664*
2010	-0.0004	0.11139
2011	0.000191	0.17103
2012	0.00024	0.34333
2013	0.003167	0.30761
2014	0.000467	0.10374
2009-2014	0.000972	0.0743*

**Significant at 10 percent*

Table 7. **Adjusted Jensen's Alpha of the SKI - Annually**

Year	AJI	Sig. (2-tailed)
2009	0.00222	0.08800*
2010	-0.00042	0.10838
2011	0.000197	0.17242
2012	-0.00089	0.40016
2013	0.003235	0.30782
2014	0.000483	0.10321
2009-2014	0.000804	0.167697

**Significant at 10 percent level*

superior performance to the JCI. However, the result is found to be insignificant. The Adjusted Jensen's Alpha Index (AJI), to a certain extent, provides evidence to support Jensen's Alpha in explaining the superior performance of the SKI against the Jakarta Composite Index.

Sortino's Ratio

The outcomes of Sortino's Ratio, as a performance measure for the period from 2009 to 2014 are tabulated in Table 8. It is shown that, Sortino's Ratios of the SKI and JCI reflect that both produce negative returns in almost all years. However, those results are only significant in 2010 and 2014 at the ten percent level. It is also noted that SKI posted lower negative returns than the JCI, except in 2011 and 2014. Positive returns for the JCI are only observed in 2011 and 2013, but both are insignificant. The outcome from the overall period of 2009 to 2014 concludes that the value of Sortino's Ratio of the SKI experiences a slightly lower negative return than the JCI. Therefore, the hypothesis that the SKI presents higher risk-adjusted return performance than the Jakarta Composite Index (JCI) cannot be accepted.

Table 8. **Sortino's Ratio Index of the SKI and the Jakarta Composite Index - Annually**

Year	Sortino's Ratio SRI	Sortino's Ratio JCI	Sig. (2-tailed)
2009	-0.00183	-0.00194	0.7824
2010	-0.00102	-0.00141	0.0808*
2011	-0.00013	3.37E-05	0.2343
2012	-0.00043	-0.00046	0.9589
2013	0.00039	0.00051	0.6534
2014	-0.00087	-0.00071	0.0949*
2009-2014	-0.00064	-0.00065	0.9329

**Significant at 10%*

Table 9. **Summary of the Risk Adjusted Returns of the SKI and the Jakarta Composite Index for the Overall Period from 2009-2014**

Index	Sharpe	ASI	Treynor	Jensen's Alpha	AJI	Sortino
SKI	0.06138	0.05922	**0.000510**	**0.000972**	**0.000804**	**-0.000638**
JCI	**0.07980**	**0.07697**	0.000438	-	-	-0.000646
Sig. (2-tailed)	**0.0181****	**0.0182****	0.549091	**0.0743***	0.167697	0.93291

Significant at 10 percent, ** Significant at 5 percent, * Significant at 1 percent*

Summary of Risk-Adjusted Return Performance

The performance evaluation is an important aspect of any portfolio's selection. From the earlier section, the risk-adjusted return performance measures namely Sharpe, Adjusted Sharpe, Treynor, Jensen's Alpha, Adjusted Jensen's Alpha and Sortino's Ratios are observed and evaluated. Table 9 presents the summary of the various performance measures for both SKI and the JCI.

The table displays the findings of the adjusted performance measures for both the SKI and Jakarta Composite Indices. Sharpe's Ratio index and Adjusted Sharpe's Ratio index show SKI's lower performance, compared to the JCI and it is significant at the five percent level. However, different results can be observed from Treynor, Jensen's Alpha, Adjusted Jensen's Alpha and Sortino's Ratios where the SKI has a better performance (outperform) than the JCI. However, only Jensen's Alpha is significant at the ten percent level.

Conclusion

The findings of this study generally indicate that, except for Sharpe and Adjusted Sharpe's Ratios, the risk-adjusted return of the SKI's performance (Treynor's Ratio, Jensen's Alpha and Sortino's Ratios) is better than that of the JCI, as a conventional benchmark index, over the period from 2009 to 2014. However, only Sharpe's Ratio, Adjusted Sharpe's Ratio and Jensen's Alpha are found to be significant. The outcome of this study can be associated with the restrictions on investment that affect the opportunities for the investment to perform. If the investors want to utilize their maximizing return, they must hold in their portfolio a combination of the market's risky assets and risk-free assets. However, social screening for SRI is incompatible with the modern portfolio theory. Modern portfolio theories suggest that any restrictions imposed on a portfolio's selection results in inferior performance (Das and Rao 2013; Jones et al. 2008; Reyes and Grieb 1998). The underperformance of the SRI fund might be causing a smaller diversification effect. The ethical concept of SRI through its screening criteria restricts the potential for portfolio diversification. This could be the reason for the underperformance of the SKI.

Another possible reason for the unfavourable findings for SRI could be attributed to the condition of the Indonesian Capital Market. According to The European Sustainable Investment Forum (2010), Indonesia was identified as one of the emerging market economies that remains in a volatile condition. The recent financial crisis in 2008 caused serious setbacks to Indonesia's development, such as reducing exports, the erosion of stock prices and a deep recession, which have all played a part in reversing the ecological and social progress achieved in previous years. The European Sustainable Investment Forum (2010), in its overview of global and corporate sustainability trends in Emerging Markets and the Environment, highlighted that social and governance risks and the opportunities for investors in 2008 and early 2009 experienced a decline during this crisis. In addition, Indonesia experienced two big economic crises in the past, namely the 1997/98 Asian financial crisis and the 2008/09 global economic crisis. Tambunan (2010) explained the impact of the 2008/09 crisis increased during the transmission period in the latter half of 2009 through to 2010. This volatility might be the reason why, in general, the returns in this period

underperformed. This is also supported by Lean and Nguyen (2014) who examined SRI indices from three major regions (Asia Pacific, Europe and North America) and noted they also underperformed during the crisis of 2008 and 2009.

Socially responsible investment, which is also known as ethical investment in Indonesia, is still in its infancy. Therefore, the empirical evidence from the area of SRI in Indonesia is very limited. This study was conducted from the inception of SKI for a period of six years, from 2009 to 2014. Undeniably, the findings of this study may not be as significant as those from a study over a longer time period and with a greater number of observations. To capture the real impact of SRI's performance, future studies into this should be conducted in an expanded time frame. It is also noted that the coverage of socially responsible investment is very wide, as it affects the environment, society and governance. However, this study was conducted based on an index consisting of 25 companies in different industries that met the selection criteria of SKI. Therefore, future studies into SRI should also be conducted on other SRI's funds in Indonesia. The fact that Indonesia is highlighted as the country with the largest Muslim population in the world make it very pertinent for any future research to explore the performance of Islamic or Shariah funds/indices, which are also identified as another kind of SRI. As this study concludes that SRI's performance in Indonesia through SKI generally yielded an inferior result, it is also interesting to explore the possible link between SRI's performance with behavioral finance, in order to shed more light onto this area.

References

Adam, A. A., and E. Shauki. 2012. Socially responsible investment in Malaysia: Behavioural framework in evaluating investors' decision making [rocess. *Journal of Cleaner Production* 80: 224-240.

Ahmad, Z., and H. Ibrahim. 2002. A study of performance of the KLSE syariah index. *Malaysian Management Journal* 6 (1 and 2): pp. 25-34.

de Souza Cunha, F. A. F., and C. Samanez. 2013. Performance analysis of sustainable investments in the Brazilian Stock Market: A study about the corporate sustainability index (ISE). *Journal of Business Ethics* 117 (1): 19-36. doi: 10.1007/s10551-012-1484-2

Bauer, R., R. Otten, and A. T. Rad. 2006. Ethical investing in Australia: Is there a financial penalty? *Pacific-Basin Finance Journal* 14 (1): 33-48. doi: 10.1016/j.pacfin.2004.12.004

Beer, F. M., J. P. Estes, and H. J. Munte. 2011. The performance of faith and ethical investment products: An empirical investigation of the last decade. *Journal of the Academy of Business and Economics* 30: 101-124.

Black, F., and R. Litterman. 1992. Global portfolio optimization. *Financial Analysts Journal* 48 (5): 28-43. doi: http://www.jstor.org/stable/4479577

Bollen, N. P. 2007. Mutual fund attributes and investor behavior. *Journal of Financial and Quantitative Analysis* 42 (3): 683.

Brzeszczynski, J., and G. McIntosh. 2013. Performance of portfolios composed of British SRI Stocks. *Journal of Business Ethics* : 1-28. doi: 10.1007/s10551-012-1541-x

Budde, S. J. 2008. *Compelling Returns: A Practical Guide to Socially Responsible Investing*: John Wiley & Sons.

Charlo, M. J., I. Moya, and A. M. Muñoz. 2013. Sustainable development and corporate financial performance: A study based on the FTSE4Good IBEX Index. *Business Strategy and the Environment*, n/a-n/a. doi: 10.1002/bse.1824

Collison, D. J., G. Cobb, D. M. Power, and L. A. Stevenson. 2008. The financial performance of the FTSE4Good indices. *Corporate Social Responsibility and Environmental Management* 15 (1), 14-28. doi: 10.1002/csr.144

Cortez, M. C., F. Silva, and N. Areal. 2009. The performance of European Socially Responsible Funds. *Journal of Business Ethics* 87 (4): 573-588. doi: 10.1007/s10551-008-9959-x

Cummings, L. 2000. The financial performance of ethical investment trusts: An Australian perspective. *Journal of Business Ethics* 25 (1): 79-92. doi: 10.1023/a:1006102802904

Das, P. K., and S. P. U. Rao. 2013. Performance evaluation of socially responsible mutual funds using style analysis. *Social Responsibility Journal* 9 (Iss: 1):109 - 123. doi: DOI 10.1108/17471111311307840

Derwall, J., N. Guenster, R. Bauer, and K. Koedijk. 2005. The eco-efficiency premium puzzle. *Financial Analysts Journal*: 51-63.

DiBartolomeo, D., and L. Kurtz. 1999. *Managing Risk Exposures of Socially Screened Portfolios*. Northfield Information Services, Boston. *http://www.northinfo.com*.

Dunfee, T. 2003. Social investing: Mainstream or backwater? *Journal of Business Ethics* 43 (3): 247-252. doi: 10.1023/a:1022914831479.

Elkington, J. 1994. Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California Management Review* 36 (2): 90–100.

Fabozzi, F. J., F. Gupta, and H. M. Markowitz. 2002. The legacy of modern portfolio theory. *The Journal of Investing* 11 (3): 7-22.

Fama, E. F. 1968. Risk, return and equilibrium: Some clarifying comments. *The Journal of Finance* 23 (1): 29-40. doi: 10.1111/j.1540-6261.1968.tb02996.x

Ferruz, L., F. Gómez-Bezares, and M. Vargas. 2009. Performance measures: Advantages of linear risk penalization. *Applied Financial Economics* 19 (1): 73-85. doi: 10.1080/09603100701477283

Ferruz, L., F. Gómez-Bezares, and M. Vargas. 2010. Portfolio theory, CAPM and performance measures. In C.-F. Lee, A. Lee and J. Lee (Eds.), *Handbook of Quantitative Finance and Risk Management*: 267-281. Springer US.

Galema, R., A. Plantinga, B. Scholtens. 2008. The stocks at stake: Return and risk in socially responsible investment. *Journal of Banking and Finance* 32 (12): 2646-2654. doi: 10.1016/j.jbankfin.2008.06.002

Goldreyer, E. F., and D. J. Diltz. 1999. The performance of socially responsible mutual funds: Incorporating sociopolitical information in portfolio selection. *Managerial Finance* 25 (1): 23 - 36. doi: 10.1108/0307435991076583

Hamzah, A. H., M. B. Rozali, and I. M. Tahir. 2009. Empirical investigation on the performance of the Malaysian Real Estate Investment Trusts in pre-crisis, during crisis and post-crisis period. *International Journal of Economics and Finance* 2 (2): p. 62.

Hamilton, S., H. Jo, and M. Statman. 1993. Doing well while doing good? The investment performance of socially responsible mutual funds. *Financial Analysts Journal* 49 (6): 62-66.

Hickman, K. A., W. R. Teets, and J. J. Kohls. 1999. Social investing and modern portfolio theory. *American Business Review* 17 (1): 72-78.

Jansson, M., A. Biel, M. Andersson, and T. Gärling. 2011. Investment style and perceived drivers of adoption of socially responsible investment among Swedish institutional investors. *The Journal of Investing* 20 (3): 118-123.

Jobson, J. D., and B. M. Korkie. 1981. Performance hypothesis testing with the Sharpe and Treynor measures. *The Journal of Finance* 36 (4): 889-908. doi: 10.1111/j.1540-6261.1981.tb04891.x

Jones, S., S. van der Laan, G. Frost, and J. Loftus. 2008. The investment performance of socially responsible investment funds in Australia. *Journal of Business Ethics* 80 (2): 181-203. doi: http://dx.doi.org/10.1007/s10551-007-9412-6

Khotim, A. 2014. Analisis pembentukan portofolio optimal dengan menggunakan model indeks tunggal dan Stochastic Dominance dalam pengambilan keputusan investasi (Studi pada saham-saham indeks SRI KEHATI yang listing di Bursa Efek Indonesia periode 2010–2013. *Jurnal Administrasi Bisnis* 11 (1).

Kinder, P. D. 2005. *Socially Responsible Investing: An Evolving Concept in a Changing World*. Boston, Mass.: KLD Research & Analytics, Inc.

Kreander, N., R. H. Gray, D. M. Power, and C. D. Sinclair. 2005. Evaluating the performance of ethical and non-ethical funds: A matched pair analysis. *Journal of Business Finance and Accounting* 32 (7-8): 1465-1493. doi: 10.1111/j.0306-686X.2005.00636.x

Larsen, G. A. 2013. Enhancing the returns of SRI portfolios using a minimum variance small-basket strategy. *Journal of Financial Planning* 26 (5): 46 - 53. doi: http://dx.doi.org/10.2139/ssrn.2279115

Layungasri, G. R. 2010. Challenges for sustainability index: Is being 'green' economically viable for Indonesian mining companies? *SSRN*. doi: http://dx.doi.org/10.2139/ssrn.1589120

Le Maux, J., and E. Le Saout. 2004. The performance of sustainability indexes. *Finance India 18*: 737-750.

Lean, H. H., and D. K. Nguyen. 2014. Policy uncertainty and performance characteristics of sustainable investments across regions around the global financial crisis. *Applied Financial Economics* 24 (21): 1367-1373. doi: 10.1080/09603107.2014.925063

Lyn, E. O., and E. J. Zychowicz. 2010. The impact of faith-based screens on investment performance. *The Journal of Investing* 19 (3): 136-143.

Markowitz, H. 1952. Portfolio selection. *The Journal of Finance* 7 (1): 77-91. doi: 10.1111/j.1540-6261.1952.tb01525.x

McGuire, J. B., A. Sundgren, and T. Schneeweis. 1988. Corporate social responsibility and firm financial performance. *Academy of Management Journal* 31 (4): 854-872.

Miniaoui, H., H. Sayani, and A. Chaibi. 2015. The impact of financial crisis on Islamic and conventional indices of the GCC countries. *Journal of Applied Business Research (JABR)* 31 (2): 357-370.

Moskowitz, M. 1972. Choosing socially responsible stocks. *Business and Society Review* 1 (1): 71-75.

Ortas, E., J. M. Moneva, M. Salvador. 2012. Does socially responsible investment equity indexes in emerging markets pay off? Evidence from Brazil. *Emerging Markets Review* 13 (4): 581-597. doi: http://dx.doi.org/10.1016/j.ememar.2012.09.004

Plantinga, A., and B. Scholtens. 2001. Socially responsible investing and management style of mutual funds in the Euronext Stock Markets. *Financial Markets and Institutions*. doi: http://dx.doi.org/10.2139/ssrn.259238

Renneboog, L., J. Ter Horst, and C. Zhang. 2008a. The price of ethics and stakeholder governance: The performance of socially responsible mutual funds. *Journal of Banking and Finance* 14: 302-322

Renneboog, L., J. Ter Horst, and D. Zhang. 2008b. Socially responsible investments: Institutional aspects, performance, and investor behavior. *Journal of Banking and Finance* 32 (9); 1723-1742. doi: 10.1016/j.jbankfin.2007.12.039

Renneboog, L., J. Ter Horst, and C. Zhang. 2008). Socially responsible investments: Institutional aspects, performance, and investor behavior. *Journal of Banking and Finance* 32 (9): 1723-1742. doi: 10.1016/j.jbankfin.2007.12.039

Reyes, M. G., and T. Grieb. 1998. The external performance of socially-responsible mutual funds. *American Business Review* 16 (1): 1-7.

Sandberg, J. 2007. Should I invest with my conscience? *Business Ethics: A European Review* 16 (1): 71-86. doi: 10.1111/j.1467-8608.2006.00470.x

Sandberg, J. 2008. *The Ethics of Investing. Making Money or Making a Difference?* Go¨teborg: University of Gothenburg, Acta Universitatis Gothoburgensis.

Sauer, D. A. 1997. The impact of social-responsibility screens on investment performance: Evidence from the domini 400 social index and domini equity mutual fund. *Review of Financial Economics* 6 (2): 137-149. doi: 10.1016/s1058-3300(97)90002-1

Schröder, M. 2004. The performance of socially responsible investments: Investment funds and indices. *Financial Markets and Portfolio Management* 18 (2): 122-142. doi: 10.1007/s11408-004-0202-1

Schueth, S. 2003. Socially responsible investing in the United States. *Journal of Business Ethics* 43 (3): 189-194. doi: 10.1023/a:1022981828869

Sparkes, R. 2002. *Socially Responsible Investment, A Global Revolution*. The Athrium, Southern Gate, Chichester, West Sussex, England: John Wiley & Sons.

Statman, M. 2000. Socially responsible mutual funds. *Financial Analysts Journal* 56 (3): 30-39.

Tambunan, T. T. 2010. The Indonesian experience with two big economic crises. *Modern Economy* 1 (03):156.

The European Sustainable Investment Forum. 2010. *Emerging Market Theme Report -5th in A Series*. from http://www.eurosif.org

The Forum for Sustainable and Responsible Investment 2012. *Sustainable and Responsible Investing Facts*. from http://www.ussif.org.

Vives, A., and B.Wadhwa. 2012. Sustainability indices in emerging markets: Impact on responsible practices and financial market development. *Journal of Sustainable Finance and Investment* 2 (3-4):318-337. doi: 10.1080/20430795.2012.715578

Viviers, S., J. Bosch, E. Smit, and A. Buijs. 2008. The risk-adjusted performance of responsible investment funds in South Africa. *Investment Analysts Journal* 68.

Viviers, S., J. Bosch, E. Smit, and A. Buijs. 2009. Responsible investing in South Africa. *Investment Analysts Journal* 69: 3-16.

Waring, P., and J. Lewer. 2004. The impact of socially responsible investment on human resource management: A conceptual framework. *Journal of Business Ethics* 52 (1): 99-108. doi: 10.1023/B:BUSI.0000033110.21900.da

Zhang, T. 2014. Do socially responsible investment funds under-perform the market? Evidence from China: Evidence from China (October 20). *International Journal of Research and Business Strategy* 3 (1) (January).